

Abstract

Proton-conducting polymer membrane comprising polymers containing sulfonic acid groups and use thereof in fuel cells

The present invention relates to a proton-conducting polymer membrane comprising polymers containing sulfonic acid groups, obtainable by a process comprising the steps of

- A) mixing vinyl-containing sulfonic acid with one or more aromatic tetraamino compounds with one or more aromatic carboxylic acids, their esters, their acid halides or their acid anhydrides, containing at least two acid groups per carboxylic acid monomer, and/or
mixing vinyl-containing sulfonic acid with one or more aromatic and/or heteroaromatic diaminocarboxylic acids, their esters, their acid halides or their acid anhydrides,
- B) heating the mixture obtainable according to step A) under inert gas to temperatures of up to 350°C, to form polyazole polymers,
- C) applying a layer to a support, using the mixture according to step A) and/or B),
- D) polymerizing the vinyl-containing sulfonic acid present in the sheetlike structure obtainable according to step C).